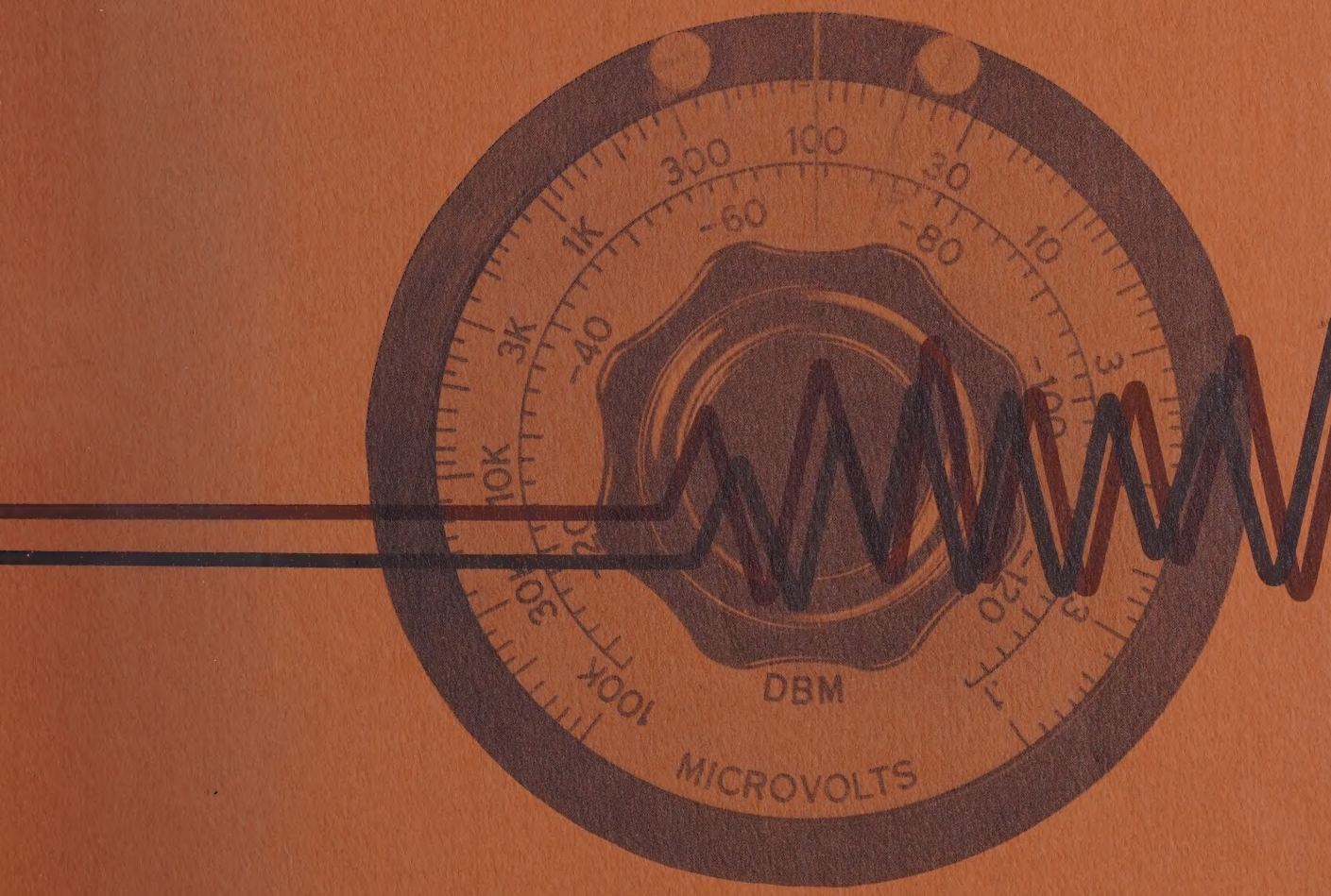
MOTOROLA INC., COMMUNICATIONS DIVISION • INSTRUCTION MANUAL

GTE-ERS
TECHNICAL LIBRARY
03490



MOTOROLA Test Equipment

FM SIGNAL GENERATOR

MODELS T1034C
T1035A
T1036A

MP MASTER
MA36350

68P81021A90-A

GUARANTEED PERFORMANCE SPECIFICATIONS

	MODEL	RF BAND						IF POS			
		A	B	C	D	E	F	1	2	3	4
FREQUENCY RANGE (mc)	T1034C	25 to 32	32 to 41	41 to 54	130 to 175	400 to 470	890 to 960				
	T1035A	25 to 32	32 to 41	41 to 54	68 to 88	130 to 175	400 to 470	2.4 to 3.9	3.9 to 6.0	6.8 to 9.4	69 to 76
	T1036A	25 to 32	32 to 41	41 to 54	68 to 88	88 to 115	130 to 175				
FREQUENCY ACCURACY	Each range is individually calibrated to an accuracy of ±0.5%.										
OUTPUT VOLTAGE RF OSCILLATOR	Continuously variable from 0.1 microvolt to 100,000 microvolts; also calibrated from 128 dbm to -8 dbm 890-960 mc band (Model T1034C)- the maximum output will vary from approx. 2000 microvolts as indicated on the chart supplied with each instrument.										
OUTPUT VOLTAGE IF OSCILLATOR	The maximum output voltage available is better than 0.5 volt into a 50 ohm resistive load. This may be attenuated at least 50 to 1 by a potentiometer on the front panel within the gain control.										
MICROVOLT REFERENCE LEVEL	Accurate to ±10% from 25 mc to 175 mc; ±20% from 400 mc to 470 mc (Models T1034C and T1035A).										
POWER SUPPLY	117 v a-c, 50-60 cps, 70 watts power consumption using a 1 amperes slow blow type fuse.										
TUBE COMPLEMENT	6AF4A 6X4		5651 6J6			6TF4 12BH7A			5963 6AQ5A		
PAD	2:1 voltage ratio (6 db) 50 ohm uhf termination										
DIMENSIONS	11-1/2" high x 15-1/8" wide x 10-3/4" deep										
WEIGHT	30 lbs.										
SHIELDING	Double shielding is used on the oscillator to reduce stray radiation to a low value. Multi-section individually-shielded r-f filters are used on all circuits going to the oscillator. Carrier leakage is negligible.										
RESIDUAL MODULATION	Residual FM modulation is less than 100 cycles at 460 mc.										
DEVIATION	The deviation is indicated directly on the panel meter. Deviation Correction Curves are used to set the desired deviation for bands E and F. The deviation accuracy is ±10% for frequency bands A, B, C, and D. Means are provided for incremental change in carrier frequency to facilitate discriminator alignment. This is accomplished by varying the d-c potential applied to the variable capacitance diode. The frequency shift, in kilocycles, is indicated by the panel meter. The same correction curves used for the deviation must be used for the incremental settings on bands E and F.										

1. DESCRIPTION

These high quality signal generators are ideal for use in servicing FM mobile, portable, fixed and aircraft two-way radio equipment for manufacturing operations; and for research on FM, multiplexing and telemetering equipment.

Six r-f bands and four i-f bands are incorporated in each of the models. The models and respective frequency bands are listed in the following table:

MODEL	RF BAND						IF BAND			
	A	B	C	D	E	F	1	2	3	4
T1034C	25-32 MC	32-41 MC	41-54 MC	130-175 MC	400-470 MC	890-960 MC	2.4 to 3.9 MC	3.9 to 6.0 MC	6.8 to 9.4 MC	69 to 76 MC
T1035A	25-32 MC	32-41 MC	41-54 MC	68-88 MC	130-175 MC	400-470 MC				
T1036A	25-32 MC	32-41 MC	41-54 MC	68-88 MC	88-115 MC	130-175 MC				

These signal generators utilize a variable capacitance diode as a frequency modulator. The units essentially consist of a built-in power supply, a double shielded oscillator, a control for selection of six separate frequency bands, an output meter and external connectors used to interconnect the signal generators to other equipment.

A temperature-compensated barretter type bridge is used for continuous monitoring of the output voltage. The barretter is a highly reliable and very accurate standard for the measurement of r-f voltage. It incorporates long-term stability and is unaffected by temperature changes. The barretter provides a true rms response which insures a high degree of absolute voltage accuracy.

Accurate incremental voltage is provided by the mutual-inductance, wave-guide, below-cutoff attenuator. The physical dimensions, which determine the accuracy of the attenuator, are maintained within close tolerance limits.

The frequency bands are designed with a tuning ratio less than 1.32 to 1, i.e. for example, in the lowest band the higher frequency (32 mc) is 1.28 times the value of the lower frequency, (25 mc). The small tuning ratio provides two advantages:

(1) An increase in the band spread which provides ease in tuning.

(2) Microphonics are reduced to a minimum due to the use of a variable capacitor with heavy rotor plates and wide spacing.

In the 890 to 960 mc band (Model T1034C), the oscillator is tuned from 445 to 480 mc, however, the output frequency is actually calibrated in terms of the second harmonic output of the oscillator. The barretter bridge circuit maintains the fundamental frequency at a constant output, thereby providing a constant second harmonic output. A SECOND HARMONIC OUTPUT CALIBRATION CHART for the 890 to 960 mc band is plotted for each signal generator. A reading on the curve indicates the magnitude of the absolute level of the second harmonic which is approximately 5% of the fundamental in a typical case. The relative attenuator calibration is not affected by harmonic operation.

A regulated and filtered power supply is used for the oscillator plate and heater voltages to provide frequency stability and to reduce to a minimum the residual FM due to power frequency hum.

2. STANDARD ACCESSORIES

Standard accessory items included with the signal generators are as follows:

a. Model 80-ZH1 Pad

The type 80-ZH1 Pad is a 2:1 voltage ratio (6 db), 50 ohms, T pad equipped with a type N male connector at the input and uhf female connector at the output. The pad is shown on Schematic Diagram 63D81029A91. Use of the pad is described in the OPERATING INSTRUCTIONS.

NOTE

These signal generators are manufactured for Motorola Inc., Communications Division, by the Measurements Corporation, Boonton, New Jersey.

b. Model H-6080 Cable

The Model H-6080 is a four foot length of RG-55/U cable with uhf connectors at each end. The cable is used in conjunction with the 80-ZH1 Pad to provide an r-f connection to the associated equipment.

3. OPERATING INSTRUCTIONS

a. Controls

(1) Power ON-OFF Switch

The ON-OFF switch is mounted on the front panel. The switch controls the application of line voltage to the primary of the power transformer.

(2) Tuning Dial

The vernier tuning dial is located on the left side of the front panel. The knob is used to set the fundamental frequency, which is located under the fiducial line in the panel opening directly above. The vernier frequency dial is geared to the main dial. The vernier dial may be set to the zero point merely by pushing downward on the dial, to release it from the main dial, and rotating it to the zero point.

(3) Band Switching

The bar knob directly above the tuning dial controls the frequency band switching. When switching bands, rock the knob slightly from side to side so that the range change mechanism is in the proper position. The frequency bands are marked A, B, C, D, E, and F.

b. External Connections

(1) EXT. MOD.

The EXT. MOD. binding posts on the left side of the panel permit the application of an external signal for frequency modulation of the carrier. Approximately 1 kc FM deviation is produced per 1.0 volt peak of modulation of signal applied. A signal of 16 volts peak is sufficient to produce 16 kc deviation. The deviation is indicated on the panel meter.

(2) Output Control

The output control is a dual control consisting of a fiducial ring and a dial. The control, calibrated in microvolts and dbm, is used to drive the piston attenuator.

The ring fiducial is used to set the output reference level of 100,000 microvolts. The ring is rotated clockwise or counterclockwise until the pointer of the OUTPUT meter is directly over the RED reference line. Under these conditions, the output dial will indicate the true output in microvolts; also when the RF OUTPUT is terminated in a 50 ohm load, the output can be read in dbm. If a 50 ohm 6 db pad properly terminated in 50 ohms, is connected to the RF OUTPUT jack, the output level is read directly beneath the pad line (labeled with a P) on the plastic fiducial.

(3) MOD. Switch

The MOD. switch is located to the upper left of the meter. Its purpose is to select the type of modulation desired.

(a) The EXT. position allows external modulation to be applied to the oscillator via the two EXT. MOD. binding posts located at the extreme lower left corner of the front panel. The deviation is indicated on the panel meter.

(b) The CW position provides an unmodulated continuous wave carrier. In this position the panel meter is connected to the barretter bridge for r-f voltage level setting.

(c) The 1000-cycle position applies approximately 12 volts rms to the modulator input for internal modulation.

NOTE

This position also supplies a 1000-cycle signal to the EXT MOD binding posts for external use, if desired.

(d) The INCR position permits incremental adjustment of carrier frequency.

(4) DEV. Control

The DEV. control is a potentiometer which controls incremental frequency shift, or frequency deviation, when either internal or external modulation is employed. The frequency deviation, or incremental frequency shift, is indicated on the panel meter.

(5) DEVIATION BAND Switch

This switch establishes appropriate correction factors in the circuit to maintain correct

calibration of the DEVIATION control for each r-f band. The DEVIATION BAND switch must be set to correspond with the r-f oscillator band being used.

EXAMPLE

If the "B" range of the r-f oscillator is used, the DEVIATION BAND switch must also be set in its "B" position.

(6) OUTPUT - KC DEVIATION Meter

When the MOD switch is in the CW position, the meter is connected to the barretter bridge to monitor the r-f output level. When the MOD switch is in the EXT or the 1000 position, the meter is disconnected from the barretter bridge and is used to monitor the modulating signal voltage to indicate the frequency deviation in kilocycles. In this case the meter is connected to a crystal diode rectifier in order to operate as an a-c voltmeter. When the MOD switch is in the INCR position, the meter indicates incremental shift in carrier frequency.

(7) IF Range

The i-f range is selected by this switch which is also on the ON-OFF switch for the i-f oscillator.

(8) IF Tuning

This control is to the right of the i-f range switch. The frequency is marked in megacycles on a line with the number indicating the i-f range.

(9) IF Gain

This control is concentric with the i-f range switch. It provides an uncalibrated attenuation of the i-f output.

c. Operation

(1) Connect the power cord to a 117 volts, a-c, power source. Place the switch in the upward ON position and allow one minute for the tubes to warm up.

(2) Rotate the bar knob to switch the desired frequency band in position. Rock the knob slightly from side to side to position the mechanism.

(3) Set the tuning knob to the desired carrier frequency.

(4) Rotate the fiducial ring until the OUTPUT meter pointer rests on the set line on the left hand portion of the meter scale.

(5) Turn the MICROVOLTS dial to the desired output voltage as indicated under the fiducial line on the plastic fiducial. To assure good frequency stability allow at least a half hour warm-up time.

(6) To frequency modulate the carrier using the internal 1000 cycle modulation, set the BAND switch to the frequency band in use. Set the MOD. switch to 1000. Rotate the DEV. control to the desired KC DEVIATION as indicated on the meter.

NOTE

If the DEVIATION BAND switch does not correspond with the r-f frequency band in use, the meter readings will be incorrect.

(7) To frequency modulate the carrier using external modulation, connect the modulating signal to the EXT. MOD. binding posts. (This signal should be approximately 16 volts peak to produce the full deviation.) Set the MOD. switch to EXT. Set the BAND switch. Rotate the DEV. control to desired KC DEVIATION as indicated on the dial to its right. Output is obtained at the BNC Connector marked IF. For correct operation, this must be terminated in 50 ohms. The i-f output will then be linear with the setting of the IF GAIN control. When the i-f oscillator is not in use, the IF range switch should be in the OFF position. The i-f frequencies not covered by the fundamental bands, can be readily obtained by the use of harmonics.

EXAMPLE

12 mc would be obtained from the 2nd harmonic of the six megacycle frequency band.

4. CARRYING AND STORAGE INFORMATION

When the signal generator is to be carried or stored, the following procedure should be followed:

a. Turn the instrument face upward by placing it on its back.

b. Leave the pad and output cable connected to the RF OUTPUT connector on the front panel.

c. Loop the output cable into a one and one-half turn coil and plug the center pin of the uhf con-

nector into the banana plug hole in the EXT. MOD. GND. binding post.

d. Loop the power cord into a coil and place it on the panel preferably with the plug toward the lower edge of the panel.

e. Place the cover on the case. Engage and snap both catches.

5. MAINTENANCE AND REPAIR

The maintenance and repairs to the instrument which may be required are classed into two categories. These are as follows: (1) simple repairs, such as the replacement of a common resistor or bypass condenser, and (2) repairs which would affect the calibration of the instrument.

a. Simple Repairs

The only components which may be replaced by the user or at an authorized Motorola Service Station are those physically located outside of the oscillator shield. (Replacement of the 6AF4A oscillator tube is usually accompanied by a change in frequency and output voltage which requires re-calibration at the factory.) Furthermore any components associated with the deviation calibration circuit should not be replaced by field personnel. The field replaceable items are assigned a standard Motorola part number as indicated on the parts list in back of the schematic diagram. The manufacturers part number is also listed with the Motorola part number for these replaceable items to assist in purchasing when required in an emergency, or to otherwise avoid delay due to mailing and handling.

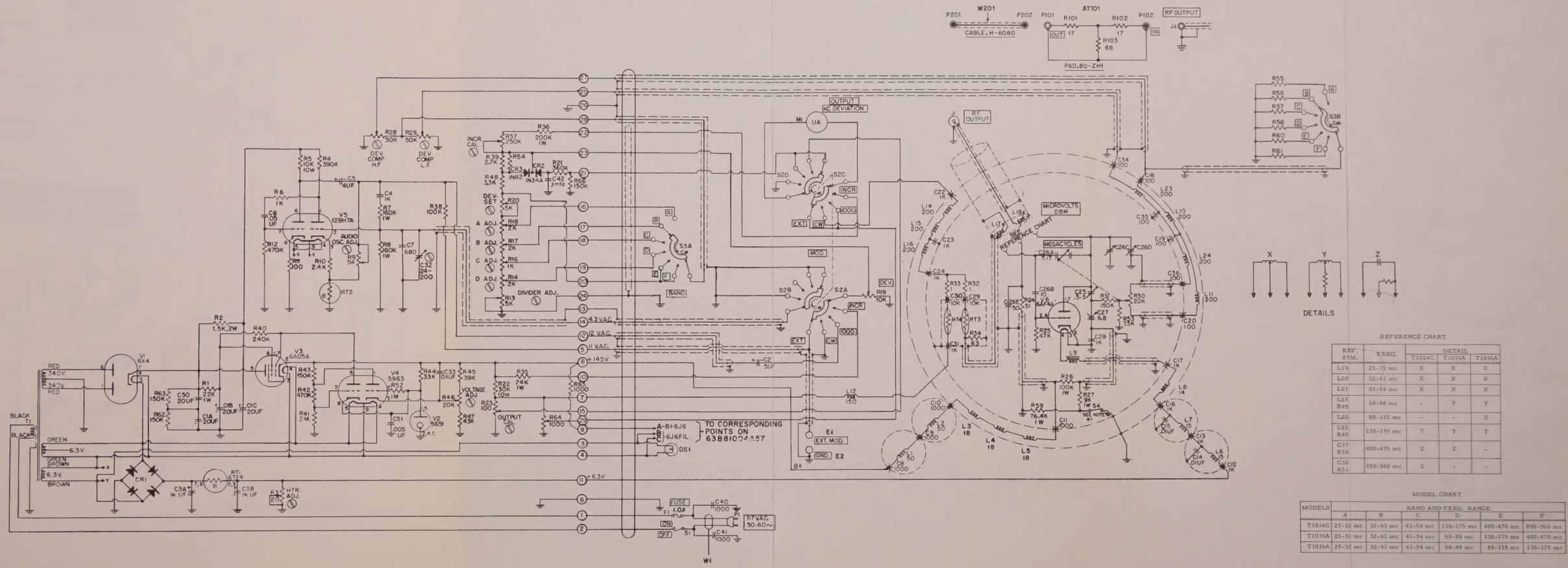
Component parts referenced with an asterisk are not field replaceable items.

b. Major Repairs

Major repairs include repair or replacement of components which may affect the calibration of the instrument. All components included in the major repair category are indicated by a code symbol or an asterisk on the parts list in back of the schematic diagram.

If a major repair or re-calibration is required, the apparent malfunction should be noted and attached to the instrument. The instrument should then be carefully packed in a sturdy shipping carton and forwarded to:

Measurements Corporation
Boonton, New Jersey
U. S. A.



⊘ - SCREWDRIVER ADJUSTMENT BEHIND PANEL
□ - FRONT PANEL CONTROL
(x) - NUMBERED TERMINALS ON POWER CHASSIS
K - 1000
M - MEG.

UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS 0.5W.
ALL RESISTANCES IN OHMS
ALL CAPACITANCES IN MICROMICROFARADS
ALL INDUCTANCES IN MICROHENRIES

NOTE:
1. SWITCH CLOSED ON BANDS A, B, C, D
OPEN ON BANDS E, F

DIAGRAM NO. 63D81021A91

REFERENCE CHART

REF. SYM.	FREQ.	DETAIL T1034C	DETAIL T1035A	DETAIL T1036A
L19	25-32 mc	X	X	X
L20	32-41 mc	X	X	X
L21	41-54 mc	X	X	X
L25 R49	68-88 mc	-	Y	Y
L26	88-115 mc	-	-	X
L22 R49	130-175 mc	Y	Y	Y
C37 R50	400-475 mc	Z	Z	-
C38 R51	890-960 mc	Z	-	-

MODEL CHART

MODELS	BAND AND FREQ. RANGE A	B	C	D	E	F
T1034C	25-32 mc	32-41 mc	41-54 mc	130-175 mc	400-470 mc	890-960 mc
T1035A	25-32 mc	32-41 mc	41-54 mc	68-88 mc	130-175 mc	400-470 mc
T1036A	25-32 mc	32-41 mc	41-54 mc	68-88 mc	88-115 mc	130-175 mc

EPD-11865-O

FM Signal Generator
RF Osc. Audio & Power Supply
Schematic Diagram
Motorola No. 63D81021A91-A
4/9/65-UP

PARTS LIST for Schematic Diagram 63D8102IA91-A

NOTE

Referenced items indicated by an asterisk (*) are not field replaceable. The equipment must be returned to Measurements Corporation for replacement of these items.

LEGEND

LEGEND SYMBOL	MANUFACTURER
A	Motorola, Inc.
B	Measurements Corporation
C	Cornell Dubilier
D	Centralab
E	Radio Material Co.
F	Sprague
G	Erie Resistor Co.
H	International Rectifier Co.
J	Aerovox
K	Wirt
L	Continental Carbon
M	Allen-Bradley
N	International Resistance Co.

REF. SYM.	LEGEND	MFG. PART NO.	DESCRIPTION
			ATTENUATOR, fixed:
AT101		58A866818	incl. P101, P102, R101, R102, R103
			CAPACITOR, fixed:
			unl stated
C1	A	23K868389	electrolytic: 3 section; c/o:
C1A			20 uf; 450 v
C1B			20 uf; 450 v
C1C			20 uf; 450 v
C2	A	23K868390	electrolytic; 5 uf; 6 v
C3	A	23K857033	electrolytic; 2 section; c/o:
C3A			1000 uf; 15 v
C3B			1000 uf; 15 v
C4	A	21K847601	mica; silver; 1000 uuf ±5%; 500 v
C5	A	23K868391	electrolytic; 4 uf; 450 v
C6	A	8K868392	paper; .05 uf; 400 v
C7	A	21K866751	mica; silver; 680 uuf; ±5%; 500 v
*C8, *9, *10, *11, *12, *13, *16, *17, *22, *24	D	DA902-000	ceramic; 1000 uuf ±20%; 500 v
*C14, *15	E	Type B	ceramic; .01 uf GMV; 600 v
*C18, *20, *34, *36	D	DA902-000	ceramic; 100 uuf ±20%; 500 v
*C19, *35	F	507C20A	ceramic; 100 uuf
*C23, *28	F	507C2	ceramic; 1000 uuf
*C25	G	532A	variable; 0.5-5 uuf
*C26	B	H-6539	variable; c/o C26A thru C26E
*C27	H	6.8SC20	variable semi: 6.8 uuf ±20%; 10 v
*C29	B	H-6162	capacitor assy.; .01 uf; incl R32
*C30			same as C29 except incl R33
*C31	B	H-6160	capacitor assy.; 1000 uf
C32	A	19K868393	variable; 24-200 uuf
C33	A	8K801190	paper; .1 uf; 400 v
*C37, *38	J	CN-1	ceramic; 22 uuf ±5%; N030
C40, 41	A	21K868395	ceramic; 1000 uuf; GMV
*C42	C	PJ4P1	.1 uf; 400 v
C50	A	23K868396	electrolytic; 20 uf; 250 v
C51	A	21K866750	ceramic; .005 uf GMC 600 v
			CRYSTAL UNIT:
CR1	A	48K857034	rectifier: selenium
*CR2			diode; type 1N34A
*CR3			diode; type 1N72 or 1N82
			LAMP, incandescent:
DS1	A	65R4141	6-8 volt; .20 amp.; single cont. bayonet base globe shaped bulb; type #51

REF. SYM.	LEGEND	MFG. PART NO.	DESCRIPTION
			POST:
E1, 2	B	HS-18	binding
			FUSE, cartridge:
F1	A	65K804910	glass; 1.0 amp.; 125 volt 1-1/4" long x 1/4" dia.
			CONNECTOR, receptacle
J1	A	9K857036	female; single cont.; chassis mounted
			COIL, RF:
*L1, *2	B	H-5744	choke; 50 uh
*L3, *4, *5	B	H-1442	choke; 18 uh
*L6, *7	B	H-5538	choke; 15 uh
*L8	B	H-1441	choke; 14 uh
*L9	B	H-6166	choke; toroidal
*L10, *11, *14, *15, *16, *23, *24	B	H-6563	choke; 200 uh (in air)
*L12	B	H-6109	choke; 150 uh
*L17			P/O attenuator assy.
*L18			P/O attenuator assy.
*L19	B	H-6169	25-32 mcs band
*L20	B	H-6171	32-41 mcs band
*L21	B	H-6173	41-54 mcs band
*L22	B	H-6176	130-175 mcs band
*L25	B	H-6706	68-88 mcs band
*L26	B	H-7505	88-115 mcs band
			METER:
M1	A	72K868398	0-50 micro-ampere
			CONNECTOR, plug:
P1	B		male; 2 conductor; a-c power
P101, 102	A	9A85615	female; coaxial; uhf
P201, 202	A		male; coaxial (p/o W201)
			RESISTOR, fixed:
			unl stated
R1	A	6R6341	carbon; 22K ±10%; 1 w
R2	A	6K121896	carbon; 1.5K ±10%; 2 w
R3	A	18K857040	variable; wire-wound; 20 ohm
R4	A	6R5646	carbon; 390K ±10%; 1/2 w
R5	A	17K868399	wire-wound; 10K ±5%; 10 w
R6, *49	A	6R6229	carbon; 1K ±10%; 1/2 w
R7, 8	A	6K868400	film; 160K ±5%; 1 w
R9	A	18K868401	variable; wire-wound; 5K
R10	A	6R5727	carbon; 2.4K ±5%; 1/2 w
R11	A	6R6326	carbon; 100 ±10%; 1/2 w
R12, 43	A	6R6377	carbon; 470K ±10%; 1/2 w
*R13, *20	K	WC818	variable; wire-wound; 5K
*R14, *17, *18	K	WC818	variable; wire-wound; 2K
*R16	K	WC818	variable; wire-wound; 1K
*R19			P/O switch assy. S3
*R21	M	EB3645	carbon; 360K ±5%; 1/2 w
R22	A	17K868402	wire-wound; 30K ±5%; 10 w
R23	A	18K868403	variable; wire-wound; 100 ohm
*R24	M	EB5105	carbon; 51 ohm ±5%; 1/2 w
*R25	M	EB4731	carbon; 47K ±10%; 1/2 w
*R26	L	NR25	film; 100K ±1%; 1 w
*R27	L	NR25	film; 9K ±1%; 1w
*R28, *29	N	Type Q	variable; composition; 50K
*R30	K	WCA	variable; wire-wound; 20K
*R31, 62, 63	A	6R6398	carbon; 150K ±10%; 1/2 w
*R32			P/O C29
*R33			P/O C30
*R34	B	H-4882-23	metal film; 63 ohm ±1%; 1/2 w
R35	A	6R2056	carbon; 24K ±5%; 1 w
*R36			200K ±5%; 1/2 w
*R37	N	Q	variable; composition; 250K
*R38	B		100K
*R39	A	6K119926	carbon; 2.7K ±10%; 1/2 w
R40	A	6K868405	carbon; 240K ±10%; 1/2 w

REF. SYM.	LEGEND	MFG. PART NO.	DESCRIPTION
R41	A	6R5778	carbon; 2 megohm ±5%; 1/2 w
R42	A	6R6377	carbon; 470K ±10%; 1/2 w
R44	A	6K127632	carbon; 33K ±10%; 1/2 w
R45, 47	A	6R400076	carbon; 39K ±5%; 1/2 w
R46	A	19K868406	variable; composition; 20K
*R48	M	EB3321	carbon; 3.3K ±10%; 1/2 w
*R50, *51	M	GB2221	carbon; 2.2K ±10%; 1 w
R52	A	6R6046	carbon; 1 megohm ±10%; 1/2 w
*R53	A	6R5728	carbon; 7.5K ±5%; 1/2 w
*R54	M	EB	carbon; factory selected
*R55	M	EB	carbon; factory selected
*R56	M	EB	carbon; factory selected
*R57	M	EB	carbon; factory selected
*R58	M	EB	carbon; factory selected
*R59	L	NR25	film; 76.4K ±2%; 1 w
*R60	M	EB	carbon; factory selected
*R61	M	EB	carbon; factory selected
R64	A	19K868407	variable; composition; 1K
R65	A	6R6229	carbon; 1K ±10%; 1/2 w
*R66	M	EB	150K; 1/2 w
R101, 102	A	6K866749	17 ohm ±1%; 1/2 w
R103	A	6K866748	68 ohm ±1%; 1/2 w
			RESISTOR, thermal:
RT1	A	65K868408	ballast lamp; type 6TF4
RT2	A	65K868409	ballast lamp; type 3S6
*RT3	B		
*RT4	B		
			SWITCH:
S1	A	40K857043	toggle; spst
*S2	B	H-6716	rotary; modulation assy.; incl R19
*S3	B		
*S4	B		toggle; type spst
			TRANSFORMER:
T1	A	25K868410	power
			TUBE; electron:
V1	A	195T105A03	type 6X4
V2	A	195T192A01	type 5651
V3	A	195T101A03	type 6AQ5A
V4	A	95R197A01	type 5963
V5	A	195T274A01	type 12BH7A
V6	A	195T142A02	type 6AF4A
			CABLE; special purpose:
W1	A	30K857046	AC power; 2 conductor; incl P1
			LINE, RF: transmission
W201	A	30P866886	incl P201, P202 and a length of RF cable

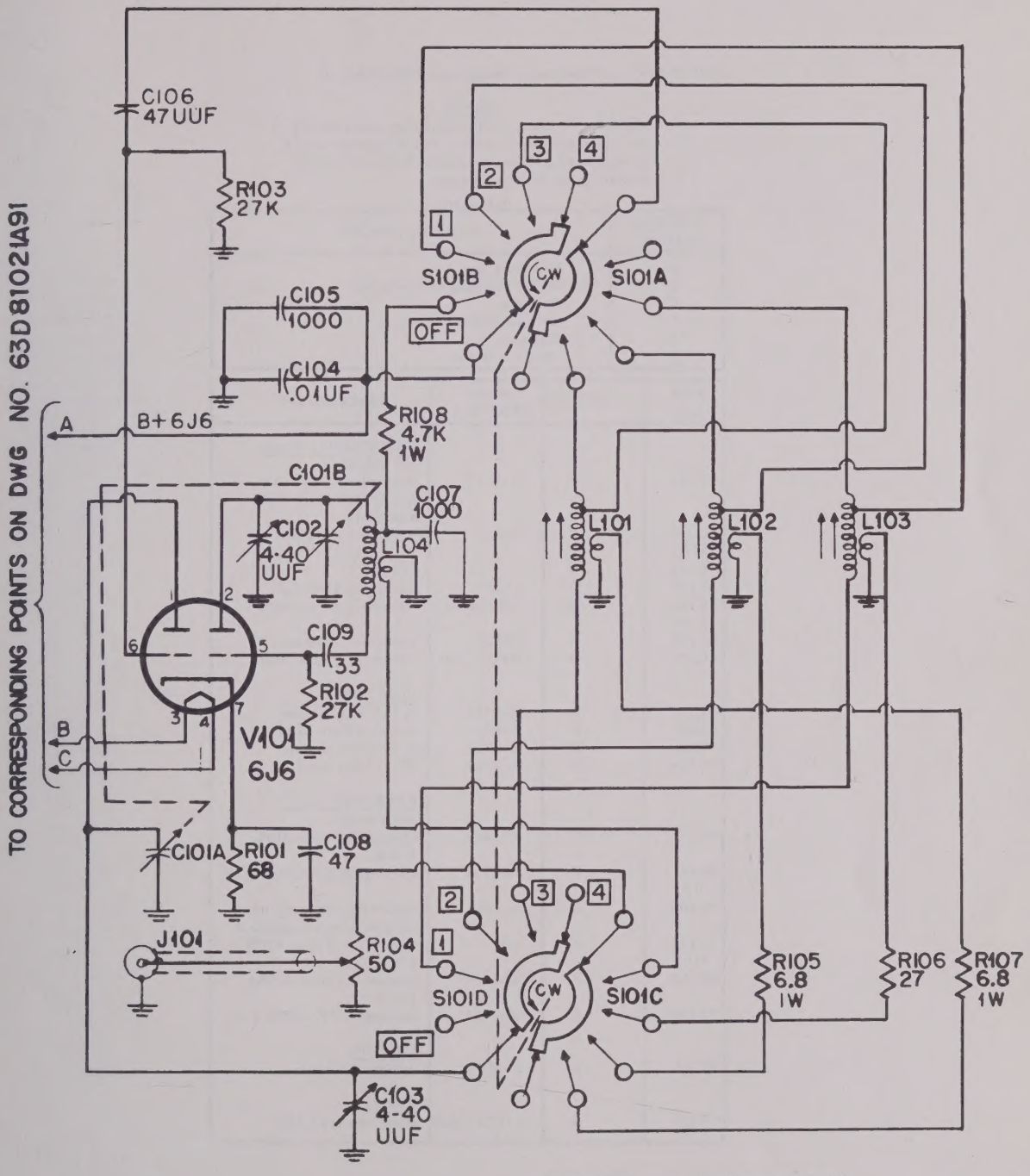


DIAGRAM NO. 63B81021A92

FM Signal Generator
IF Oscillator
Schematic Diagram
Motorola No. 63B81021A92-O
4/9/65-UP

PARTS LIST for Schematic Diagram 63B81021A92-0

NOTE

Referenced items indicated by an asterisk (*) are not field replaceable. The equipment must be returned to Measurements Corporation for replacement of these items.

LEGEND

LEGEND SYMBOL	MANUFACTURER
A	Motorola Inc.
B	Measurements Corporation
C	Sprague
D	Erie Resistor Co.
E	Elmenco
F	Allen Bradley

REF. SYM.	LEGEND	MFG. PART NO.	DESCRIPTION
			CAPACITOR, fixed; unl stated
*C101	B	H-6717	variable; c/o C101A and C101B: incl C102 and C103
*C102, *103	E	#422	variable; 4-40 uuf
*C104	B		.01 uf
*C105	D	#327	ceramic; 1000 uuf
*C106, *108	D	NPO338-47	ceramic; 47 uuf ±5%
*C107	C	507C2	ceramic; 1000 uuf
*C109	D	NPOL-330	ceramic; 33 uuf ±5%
			COIL, RF:
*L101	B	H-6730	2.8-4.2 mcs band
*L102	B	H-6731	4.1-6.0 mcs band
*L103	B	H-6732	6.0-9.2 mcs band
*L104	B	H-6729	67-76 mcs band
			RESISTOR; fixed: unl stated
*R101	F	EB6801	carbon; 68 ohm ±10%; 1/2 w
*R102, *103	F	EB2731	carbon; 27K ±10%; 1/2 w
*R104	B	H-6745	variable; wire-wound; 50 ohms; non-inductive
*R105, *107	F	GB	carbon; 6.8 ohm ±10% 1 w
*R106	F	EB2701	carbon; 27 ohm ±10%; 1/2 w
*R108	F	GB4721	carbon; 4.7K ±10%; 1 w
			SWITCH;
*S101	B	H-6574	rotary; i-f band
			TUBE;
V101	A	195T181A01	electron; type 6J6

FM Signal Generator

68P81021A90-A

national

MOTOROLA

RADIO COMMUNICATIONS

service

MP MASTER

MA36350